

Serial No. 10/590,511
Amendment of Feb. 5, 2010
Reply to OA Oct. 5, 2009

IN THE CLAIMS:

1. (Previously Presented) A linear actuator comprising
 - a) a cabinet having
 - b) a reversible electric motor with a motor shaft,
 - c) a reduction gear with several stages, where a first stage with an input side is connected with the motor shaft, said first stage comprising a planetary gear and an extended end of the motor shaft is configured as a sun wheel having an orbital wheel,
 - d) a spindle whose one end is connected with an output side on the last stage in the reduction gear, and the other end of the spindle indicates the front end of the actuator,
 - e) a spindle nut secured against rotation on the spindle such that this is moved to and fro on the spindle in response to the current direction of rotation of the motor, and wherein the spindle nut may be secured indirectly or directly to the structure in which the actuator is incorporated,
 - f) a rear mount at a rear end of the actuator likewise for attachment of the actuator in the structure in which the actuator is to be incorporated, and
 - g) a ball and ratchet overload clutch which is released at a predetermined torque, wherein the overload clutch is directly connected to the first stage in the reduction gear.
2. (Currently Amended) The actuator according to claim 1, wherein the over-load clutch is formed by a ball and ratchet clutch

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comprising a ring with holes for the balls, and wherein the balls on that side are in engagement with depressions in a first plate firmly connected with the transmission from the motor, and on the other side are in engagement with depressions in a second plate member[[]], wherein a spring mounted against the ceiling in a cap keeps the plate member and thereby the balls in engagement, and wherein the cap is secured by a predetermined force directly or indirectly to the first plate member, and wherein the ring with the balls is connected with the further transmission to the spindle.

3. (Previously Presented) The actuator according to claim 2, wherein the ring with the balls is connected with a shaft member with a gear wheel as a transition to the subsequent stages in the gearing to the spindle.

4. (Previously Presented) The actuator according to claim 3, wherein the shaft member is connected with a brake device to increase the self-blocking capacity of the actuator.

5. (Currently Amended) The actuator according to claim 2, wherein ~~the~~ an end of ~~the~~ a shaft member or an extension thereof is configured to receive a crank through an opening in the cabinet for manual operation of the actuator.

6. (Previously Presented) The actuator according to claim 1, wherein the rear mount and a bearing for the spindle are secured in a mounting element consisting of two parts mounted in a depression in the

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cabinet and secured with a nut, screwed on to the part of the rear mount which protrudes through the cabinet.

7. (Previously Presented) The actuator according to claim 1, wherein a guide profile for an activation element, in addition to being secured with the end to the cabinet, is additionally attached to the cabinet with two claws which grip down around the edge on the outer side of the guide profile.

8. (Previously Presented) The actuator according to claim 1, wherein an electrical control for the actuator is incorporated in the cabinet.

9. (Previously Presented) The actuator according to claim 1, wherein the end stop positions of the spindle nut are controlled by two electrical switches which are activated by a longitudinally movable element with two arms seated in a slot in a housing, said arms having interposed between them a spring whose ends additionally engage a stop in the housing.

10. (Previously Presented) The actuator according to claim 7, wherein the position of the activation element is determined with a potentiometer constructed as an add-on unit in engagement with down gearing between a safety clutch and the spindle.